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THE PORT AUTHORITY OF NEW YORK AND NEW JERSEY

MEMORANDUM

To: August Preschle, Manager, World Trade Center Operations
From: Harry R. Pool, Jr.
Date: December 17, 1987
Subject: THE WORLD TRADE CENTER - ASBESTOS INVESTIGATION AND ANALYSIS REPORT

Copy to: F. Boyce, N. Budeiri, D. Darcy, R. Fagin, M.D., D. Hahn, P. LaRocco, D.Leahy, R. Linn, P. Maurer, D. Montalbano, S. Samperi, V. Strom, W. Weill

The baseline asbestos survey of the World Trade Center, whose objective was to locate, identify and assess the condition of asbestos containing materials (ACM) throughout the complex, has been completed. This investigation consisted of three phases: the identification of the location of possible ACM throughout the facility; the collection and laboratory analysis of bulk samples; and the development of an environmental risk assessment.

Air monitoring to date at the facility indicates air quality levels are well within current Federal Standards.

Buildings One, Two, Four, Five and the associated sub-grades were sampled for the presence of ACM in some or all of the following materials: spray-on fire retardant on structural support beams, concrete slabs and metal deck ceilings; insulation on heat transfer pipes and on heating and cooling equipment; ceiling tiles; floor tiles and other materials serving as insulation or acoustical barriers. Sampling of materials, products and locations will continue on an as needed basis at the request of the facility, to further define ACM locations and to further define ACM in the vicinity of proposed building alterations.

The Vista Hotel (Building Three) received limited sampling since this structure was built well past the moratorium on the use of asbestos products as for insulation and as a fire retardant.

This survey was conducted over the period January 1986 through August 1987 during which time over 15,000 bulk and air samples were collected and analyzed.

The investigation was accomplished by entering areas, both occupied and vacant, to locate possible sources of ACM. The type of possible ACM as well as the building number, sample location, and area description were indicated on the bulk sampling form. In addition, the sampling results are being plotted by WTC staff on the layout plan of each floor for distribution to the applicable operations, planning and construction personnel. A statistical consultant was also retained to assist in determining the appropriate number of bulk samples to be taken so that the results would be within significant confidence limits.

A prioritization system has been developed which will inform the facility as to those areas requiring an Immediate Response. In addition, this system will rate other locations as Priority, Operations and Maintenance, Controlled Conditions, or free of asbestos containing materials (ACM free). The categorization of all surveyed areas and the definitions used in the risk assessments are as follows:

Immediate Response Condition

An Immediate Response Condition (IRC) exists if there is an unavoidable risk potential due to the disturbance of asbestos fallout material within a specific area, which includes evidence of asbestos material separated from initial installation, deteriorated condition of existing asbestos material, high risk of contact, or the possibility of causing unacceptable levels of airborne asbestos fibers in areas frequented by employees and/or patrons. Air sampling should be initialed in all areas rated as IRC. Redesignation of these locations should take place after the Immediate Response has been completed.

The following locations at the World Trade Center are defined as IRC: the roofs of elevator cars in Tower One within the shafts where delamination has occurred and the B-6 Level Mechanical room which has fallout material present in one localized area.

World Trade Center management has been briefed on these conditions and been provided with a list of specific locations. In addition, World Trade has requested the Inspection and Safety Division to employ the clean-up and disposal call-in contractor to assist in cleaning these areas. A regular monitoring program to detect similar fallout materials in the future should also be initiated.

Priority Area

In order for a location to be designated a Priority Area, the asbestos material must be in disrepair or accessible to the extent that worker activity, or other forces, could produce an increase in the level of airborne asbestos fibers. As with an IRC, Priority Areas should receive air sampling as an additional input for the risk assessment analysis. Periodic re-inspection of conditions in a Priority Area are mandatory. Once a Priority Area is identified by the Inspection and Safety Division, the facility must institute the appropriate measures. All aspects of an Operations and Maintenance Area must also be followed.

The following locations at the World Trade Center are defined as Priority Areas: the northwest corner of the B-2 Level Parking Lot and the northeast corner of the B-4 Level Parking Lot. In addition, all areas in Zone One, One World Trade Center which did not have the fire safety sprinkler system installed because of the presence of ACM should be considered a Priority Area.

Operations and Maintenance Area

This type of asbestos condition is frequently found where the ACM is installed in a location that is not directly accessible to employees or the public. However, for operational or maintenance purposes, employees may be required to work in close proximity and thereby increase the risk of disturbance to the asbestos. In these areas, workers and building occupants must be

alerted to the location of the ACM as applicable, and personnel must be trained in proper cleaning, maintenance, repairs and renovations. All such areas must be periodically re-inspected by the facility.

Based upon our investigation, it has been determined that the Mechanical Equipment Rooms where asbestos containing fireproofing and pipe insulation has been identified fall under the category of Operations and Maintenance. In addition, all other World Trade Center areas where asbestos containing sprayed-on fireproofing has been identified (see Summary Tables which follow) also fall under the category of Operations and Maintenance.

Controlled Condition

Routine monitoring should be performed when asbestos material is found to be in a Controlled Condition, i.e., when the potential for disturbance is remote (e.g., asbestos within a steel fire floor, most asbestos vinyl tile installations, and completely encased ACM, etc.). This type of condition often involves non-friable material, or friable material that is inaccessible under normal circumstances. Re-Inspection in Controlled Condition Areas is less important than for Operations and Maintenance Areas, however should be performed periodically by the facility to insure the continuity of the Controlled Condition.

The following locations at the World Trade Center are defined as Controlled Controlled Areas: all vinyl floor tile containing asbestos material, the steel doors containing asbestos fireproofing and all structurally contained ACM areas. A local exhaust ventilation and collection system equipped with a HEPA (High Efficiency Particulate Absolute) filtration unit designed and operated to capture particulate asbestos material produced by the stripping, cutting or disturbing of asbestos materials shall be utilized when work is performed in these areas.

A summary table of all areas and their respective risk assessment ratings immediately follows this memo.

The United States Customs House (Building Six) was surveyed and sampled by an outside consulting firm in accordance with the U. S. General Services Administration Contract. We have secured a copy of the consultant's report on Building Six and it reveals that there are various locations which contain ACM. Although somewhat concerned about the limited number of samples taken by the U. S. Customs consultant, we have nevertheless passed this report along to World Trade Center staff for their edification.

We have consulted, and will continue to consult with, World Trade Center staff on all aspects of the Asbestos Control Program. It is also important to maintain a continuing awareness that any Operations and Maintenance or construction activity that may disturb ACM shall be carried out in a manner which assures the safety of employees, the public, and the environment in accordance with applicable regulations as well as Port Authority specifications.

The attached report describes conditions as observed at the time and date of the investigation. Physical conditions in some areas may have since changed thereby altering the attached report. Prior to the development of any abatement plan or control procedure(s), those areas should be visually inspected to determine actual conditions.

We would like to extend our thanks for the excellent cooperation we have received form the World Trade Operations and Maintenance staff. In particular, we acknowledge the outstanding assistance of Frank Boyce and Jeff Pearse during this investigation.

We will continue to provide further assistance on asbestos related matters. If you have any questions regarding these findings please call me at PATHside (201) 963-7476.

Harry R. Pool, Jr., Administrator
Inspection and Safety Programs
Inspection and Safety Division

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